

Blender learning made easy



## Things that go bump in the Night!

3dWorkshop - Tracks Creator

3dWorkshop - Fun With Texture Nodes

3dWorkshop - WaterTank

Making Of - Arkor

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Sandra Gilbert  
Managing Editor

*Fear... It's because fear, while often unpleasant, jump starts your heart, gets the blood moving and makes you feel alive.*

**H**ave you ever noticed that people like getting the "living daylights" scared out of themselves. In fact some people even go out of their way to scare themselves (i.e. scary movies, images, games, rides etc). And why you might ask, would so many people enjoy getting scared. It's not like fear is one of the fun warm fuzzy feelings. It's because fear, while often unpleasant, jump starts your heart, gets the blood moving and makes you feel alive. If you ask me, it is a darn odd way to enjoy yourself, but hey whatever makes you happy or should I say feel alive.

Although we are still months away from Halloween, as you might have guessed, we're going to try to give you a few scares. All in fun of course. In this issue we are going to explore "Things that go bump in the Night" and see if we can't get your blood pumping a little.

We have a "Cute Clown", who is anything but cute. In fact, he is downright scary enough to give you a nightmare or two. Nahuel Belich explains all the gruesome details and inspiration for his "Cute Clown" image, he even made us

some videos showing how he went about certain stages.

David Skrodzki and Paulo Silva both show us how they created their creature characters, LOTR Cave Troll and Arkor. Philippe Roubal shows us how to create tracks and foot prints. This is one very creative technique that has all kinds of uses. From footprints in the sand or snow, to wet ghost prints silently appearing in a dimly lit room. And Pascal Fallert shows us how he created a great fluid simulation that looks suspiciously like blood.

So get ready to be spooked, educated and entertained. Oh, and you might want to turn all the lights on... just in case. Have Fun!

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*What could be better than watching the creation of what admittedly is a rather nasty creature? Well, nasty in the sense that I wouldn't want to run into it in a dark alley....*

## Introduction

I finally got a chance to sit down and watch Creature Factory, and oddly enough, the timing was perfect for this issue's theme. What could be better than watching the creation of what admittedly is a rather nasty creature? Well, nasty in the sense that I wouldn't want to run into it in a dark alley.... who am I kidding, I wouldn't want to run into that thing in a well lit alley. :P

And yet for all that the creature is obviously a dangerous character, it is also beautiful in its own way. Especially the way it moves. Almost cat-like in its gracefulness, with a coiled, pent-up power and danger ready to be unleashed at a moment's notice.

Watching Andy create such an amazing creature (who I later discovered he had nicknamed Larry,... that made me giggle), was very educational for me. It was somewhat of an eye opener to see that a creature that detailed, actually had so few vertices (relatively speaking of course). His technique/ modeling style produces quite a bit of detail while creating some very clean meshes (Something I am going to seriously try to emulate in my future models).

So let's talk about Creature Factory. Andy recorded over 40 hours of work on the production of a 90 second trailer. In the first place, only 40 odd hours for a 90 second trailer? I think he must have a souped up version of Blender or a magic button the rest of us didn't get. :P

All kidding aside, Andy is a talented artist and Creature Factory is a peek into not only how he works and creates his images and animations, but into his imagination and creative thought process as well.



As you watch the resulting edited videos, Andy provides a detailed running commentary on the decisions he made, why he made them and even laughs at himself as he realizes that he made mistakes here and there. Which of course adds to both the educational as well as entertainment value of the videos. Quite a lot can be learned from seeing or making a mistake and then being required to fix it in order to make a project work.

In addition to seeing Andy model not only the creature and the environment (the set), he also shows you how he set up his lighting. There are several different lighting setups depending on which part of the trailer you are looking at. But the one that struck me as the most inspired was in the shot of the spherical gate (door) just before and as the creature is coming out. The combination of the greenish blue lights with the dark reds is admittedly an odd combination of colors to use, but the result added a depth and realism to the feeling of impending danger as the creature emerged.

Having just recently tried my hand at posing and animating (with somewhat disappointing results), I watched very closely to gain as many insider tips and techniques as possible, as Andy posed and animated the creature for the various shots. The main thing that stuck with me is that he set all the main poses first and then went back and added more in between poses. That seems to be a rather quick and effective way to get yours shots blocked out and refined with a minimum of fuss.

All in all, I greatly enjoyed all the videos and learned quite a bit just from my first viewing of them. I will obviously be viewing them again at least several times to make sure that I have gleaned all possible tips and tricks. Which I may or may not be able to actually duplicate or apply to my own projects. At the very least, it provides a great deal of inspiration to try to create greatness myself.

If you have not seen the Creature Factory videos as of yet, I highly encourage you to do so.

You can still purchase your very own Creature Factory DVD from the [Blender Foundation e-shop](#).

Purchasing the DVD from the e-shop not only gives you all the videos, written tutorials and blend files, but you will also be supporting future Blender Foundation training projects.

BlenderGroupie has uploaded the videos from Creature Factory to his [blip.tv](#) channel and can be viewed here ■

## Durian Project

The third open movie project has started preparation and will soon be underway. Submission deadline has passed with over 150 submissions received to be sorted through for our new team members. The members will be announced soon.

They already have a project page set up so that you can start following their progress.

[Durian Project](#) is due to start up September 1, delivering a result around March/April 2010.

*"Durian is an Asian fruit, ugly and smelly but delicious. That's a perfect code name for a movie project aimed at adolescents mostly; with an epic fantasy theme with lots of action, monsters and a girl hero!"*

*As usual, there's been a lot of work behind the scenes to ensure we have a realistic target, and good outlook on getting additional financing. Only then I appoint a small core team to help me further defining this project. I'm very happy to be able to announce these three great artists who will help out:*

- *Martin Lodewijk, godfather of Dutch comics, for script*
- *Colin Levy, Blender artist and filmer, director*
- *David Revoy, Blender artist and illustrator, concept art*

Check the portfolios on the [about](#) page.

*They will also need everyone's help to support this project. Once the full team is known a DVD pre-sale will*

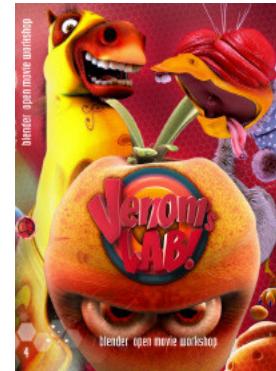


*start, providing us with the essential basic funding to give the team a good and warm welcome to start working in Amsterdam."*

## DVD training 4: Venoms Lab!

The Blender Institution has announced their 4th training DVD. *Venom's Lab!*, created by Pablo (VenomGFX) Vazquez, lead artist of project Apricot, Yo Frankie!

Pablo has put together 10 information packed chapters covering the specific techniques and tools needed to create some of his most famous characters.



## Table of Contents:

1. Firulo! : Subsurface modeling
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5. Carnerito! : Realtime GLSL shading
6. Antonio! : Cloth simulation
7. Merlin! : Eye modeling, shading
8. Braka! : Fur, grooming and shading
9. Tibolino! : Compositing and environments
10. Teaser! : All techniques used for the teaser

The DVD assumes you already know the basics of Blender, like object transform, simple modeling, adding materials, or working with files. It is especially targeted at people who want to train their artistic skills and master Blender further.

Venoms Lab includes the latest (2.49) version of Blender for Windows, Mac OS X and Linux, as well as a lot of free to use characters and demo files. The training techniques were chosen to be valid in the 2.5x Blender releases as well.

The DVD will be in both Spanish and English. This is still a pre-order item that is due to be shipped the end of June 2009.

## Blender 2.49 Release



The [newest](#) release of Blender came packed with some really fun goodies as well as some bug fixes and code clean-up.

**Video Texture:** The Game Engine now supports multiple streams of video textures for interactive playback in environments. You can use video files (also from URLs), image files, video captures, memory buffer, camera render or a mix of that.

**Real-time Dome rendering:** This feature allows artists to visualize their interactive projects within an immersive dome environment. Blender supports Fulldome, Truncated domes (front and rear), Planeteriums and domes with spherical mirrors.

**Game Engine speed-up:** Significant speedup has been achieved in several areas;

- Scene Graph optimizes static objects
- View Frustum culling
- Occlusion culling
- Faster Bullet physics initializing

Overall improvement is significant, a complex game like Yo Frankie runs 3x faster now.

**Bullet Physics:** The Bullet library upgrade in this release includes brand new generic 6dof constraint with run-time configurable limits, motors and springs to allow for physics-based vehicles, forklift, robots and ragdolls. And more...

**Game Engine Modifier support:** Support for non-time-dependent modifiers in the GE: no need to apply the modifiers before running the game! Works for physics shape too.

**Improved Game Logic and Python API:** Improve stability, documentation and completeness for the python API.

- Attribute access
- GameObject properties of any type.
- OpenGL and Geometry modules
- New logic and the rendering functions
- Better error feedback

**Texture Nodes:** Next to Compositing and Materials, Blender Textures now support Node editing. You can use it to create advanced procedural textures, including fractal based systems. And even better, a Texture Nodetree

can even become a Brush for painting.

**Projection Painting:** Painting in the 3D view has been improved to support projection painting which allows you to paint directly onto your model without having to worry about UV mapping or seams.

**Etch-a-ton armature sketching:** Etch-a-ton is a development snapshot for sketching techniques applied to rigging. It can be used both for creating chains of deformation bones through various subdivision techniques or through re-targeting templates

**Boolean improvements:** In 2.49 you can put a Boolean Modifier on any level in the stack, allowing you to intersect deformed or subdivided models too. You can also insert multiple Booleans in one stack now.

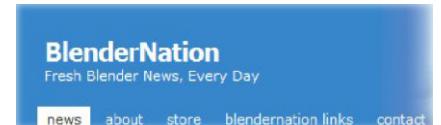
**JPEG2000 support:** Blender now supports the new high quality JPEG format. It has much better compression, supports Alpha layers, and HDR color up to 16 bits per channel. JPEG2000 support is available in Blender everywhere, including Sequencer, Compositor and UV texture editor.

**Python Script extensions:** New scripts have been added, tools such as Landscape or Bolt generators, and the importer/exporters had several updates and fixes.

Also worth visiting is the very complete (over 300) [Scripts Catalog](#) in our wiki.

**Features & Fixes:** A lot of smaller features and bug fixes were done for 2.49 as well. Hundreds of reports were handled the past 6 months.

## BlenderNation Links



Bart has recently added even more usefulness to the valuable BlenderNation site. He has set up a link page to make it easier for users to find links to up to date tutorials, models, books and textures.

### From the BlenderNation site:

*I am with great pride (and just a tiny bit of fear) that I announce [BlenderNation Links](#)! I'm hoping that it will solve the biggest challenge for Blender users: finding quality and up to date tutorials, downloadable models, textures, books.. BN Links is a community-driven website where authors can leave their links and tag them. Our link browser allows you to drill down to exactly the kind of content that you're looking for.*

### For example:

*Looking for Spanish tutorials on modeling? [We have that](#). An English tutorial that covers both rendering and texturing, for intermediate-level users in PDF? [We have that](#), too. Downloadable models under a Creative Commons license? [Check](#). Or maybe you're just looking for English video tutorials for advanced users? [Try here](#). Oh wait! Some good books on lighting and rendering. [Just what you needed](#).*

*Go on - try it and see if you can find anything you like. Please note that we've just begun filling the database so there are only about 60 links in the system now - hopefully this will increase rapidly after today!*

*Of course you can leave comments for each link and these comments will be mailed to the link's author.*

### **Where do you find BN Links?**

*To access BN Links, follow the 'BlenderNation Links' menu at the top of this page, or use the link in the sidebar on the homepage.*

### **Would you like to add your links?**

*Like I said, BN Links is a community-driven website. You can enter your own links - read more about how to [apply for an account here](#).*

### **The Future**

*BN Links is not finished yet. One of the most important new features will be community ratings and sorting of links by their popularity. For now, I first need to see how our (old!) server holds up under the load. If everything goes ok, then I'll activate new features one by one. Of course, if you have suggestions for new features or link types, let us know! ■*



Automated Setup for Creating Tracks

By Philippe Roubal

## Introduction

An automated setup to help you make all kinds of tracks or prints in grass, sand, soil, mud, snow, paint or... blood !

Some days ago, I found an excellent video tutorial about making realistic grass, written by Andrew Price on [blenderguru.com](http://blenderguru.com). His materials and lighting setup are really awesome and I have enjoyed playing with them. Last year, I had done some countryside scenes

with animated grass, but I had used a completely different method to animate the grass, based on a copy of the ground mesh hidden underneath the ground surface, animated by a displacement texture. I mean that the hair particles were animated by the moving mesh, not directly by the texture itself.

Andrew's method to simulate the wind and animate the grass is based on a moving texture named Wind and driven by an Empty. This Wind texture is a procedural Marble texture applied to the grass material, but disabled in the texture panel. A Field is applied to the Empty. The Field is set to Texture and RGB and uses the Wind texture as reference.

After reading Andrew's tutorial, the first question that came to my mind was: great, we have nice grass, but now... how do we mow the lawn in an animation? After some searches and experiments, I found that the same method was usable using hand drawn textures or animated textures. Almost any effect can be achieved, like the track of a lawn mower, a car, a predator running in high weeds and anything else you could imagine.

A long time ago, I had made a tutorial about foot prints on the sand. I decided to build a setup to easily create all kinds of tracks and prints we could need, and usable on almost all natural materials like grass, sand, soil, mud, snow, paint or even wet foot prints on a wood floor: the [Tracks Creator](#). But before animating, let's study an example with a still texture.

For displacement mapping and also for simple Bump or RGB nor Map, it is often easier to select Object in the Map Input panel, and use an Empty as object reference, to allow the perfect placement of the texture. When using a Displacement Modifier, you may move the texture manually by moving the Empty, and the effect is visible in real time in the 3D window.

Because only UV mapped textures are visible in the 3D window, for Bump maps or Nor Maps, you will have to render or use the Preview [Shift+P] render window.

Textures moved by an object or an empty used as reference have plenty of uses. In GIMP or any other image editor, you can create textures with specific patterns to achieve all kinds of interesting effects. My short animation "Crazy Boat", is another example of the use of a moving texture applied to the water material, to create a hole in the surface of the sea under the boat.

In my lawn mower animation, I have used a hand drawn texture animated by an empty to define an area where the grass blades (hair particles) are pushed by the texture under the lawn mower. In fact, the lawn mower is parented to the same empty used to drive the texture. The texture is added to the Ground plane material.



Note that you could also drive your texture directly using the Lawn mower object, but using an empty is handy if you want to change or re-size the Lawn mower model.

We will use RGB as a Wind parameter for the Field, after noticing that the grass behaviour was not the one I expected when using a greyscale texture, I experimented with other color textures.

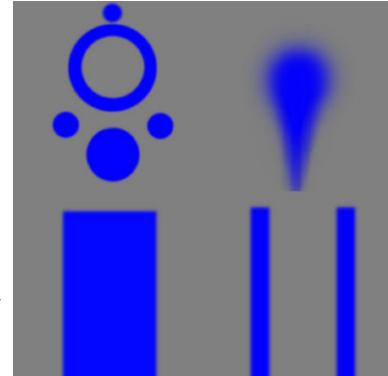
Using Red, Green or Blue give different results : your hair particles are pushed in different directions according to the chosen color.

After some tests, I decided to use a Blue on Grey texture. The Grey color is set to (R=127, G=127, B=127) or (R=128, G=128, B=128). This Grey color is neutral and doesn't affect the particles. Using a Blue color, I got the grass blades to be pushed in the direction the lawn mower was moving. Below, the textures created to achieve the effects shown.

The texture is set to Extend mode. This allows it to extend the color of the texture in all directions and you will get an infinite track in the direction where the Blue color is in contact with the border of the texture.

Note that you can visually control the effect of the texture in top view, and re-size the texture to adjust the width of the mower track by resizing the Empty. Use [S] Key without any axis specification to avoid diagonal distortion! You may notice that the effect of resizing is inverted: your texture increases when you reduce the size of the empty.

I have used the Strength parameter of the Field (you can also adjust the Contrast parameter of the texture) to allow for shorter grass. I stopped just before the grass totally disappeared, for more realism. This allows you to keep some uncut grass blades. Now, we need to get shortened grass on the track of the lawn mower. Using Weight Painting on the ground mesh allows you to get various lengths for the grass in different areas, but animation of the weight doesn't seem to be possible. Selecting Particle Mode in the 3D view and setting the particles system to Editable allows you to visually vary the length of the hair particles where you want, using the Comb tools, but this feature can't be animated either.



The old particle system available in former releases of Blender allowed you to control the length of the Static Particles (name of hair particles in those old versions) using a grayscale texture. I haven't found yet such a function in Blender v2.48a, but maybe one of the other Field options allows it. Until I'll find a better way, I used another method to get the short grass after the lawn mower passed by:

The idea is simple - I duplicated the ground plane and set the copy to not render the emitter.

On this second ground surface, I make short grass grow. It is always present but only visible in the area where the lawn mower has pushed down the long grass blades! It is not necessary to keep the same surface as the main ground plane, because you only need to fill a narrow lane on the track of the lawn mower. After reducing the surface, you can reduce the amount of hair particles created on this surface, otherwise you'll get very thick grass on this lane. I have used a different texture setup in the Colorband, because cut grass is more green than long blades.

In the example shown up until now, we have used only static textures (simple images). You will certainly want to create more complex effects, with a Jeep car driving through the fields or a predator running in the high weeds, a Bigfoot walking in the snow, or the invisible dead Lady of the black lake leaving wet foot prints on the pontoon. And of course following a path that will be all except straight!

At this point, you will need an animated texture. The Tracks Creator setup will help you in this task, and it will be almost as simple as pushing a button (I said almost!). You can render the animated texture as an AVI file or a sequence of images. I advise you to use a sequence of images instead of a video, because videos

don't allow the Displacement Modifier to work in real time.

Open the [Tracks-Creator-v3.blend](#) file and follow the instructions in the Text window. There are 2 screens available :

## Screen 1 : Animation - Screen 2 : Compositing.

In the compositing screen you can adjust the level of blur of your animated texture.

There is a different setup on each layer used. This will allow you to create various animated tracks. Obviously, after playing a bit with the Blend file, you will be able to create your own tracks, to match your needs.

The animated texture that will be created by this setup will be usable mainly in 3 manners :

- 1 They will allow you to control the behaviour of the grass made with hair particles, like shown in the previous examples and in Andrew's tutorial, but with complex curved paths.
- 2 They can be used with the Displacement Modifier to create prints in sand, soil, mud and snow. For that you will have to use a highly subdivided ground mesh. The resolution of the textures will have to be high to render details on a large surface. The example below has been done with a surface of virtual desert measuring 18 meters x 18 meters, made of around 800000 quad faces. Only a small part is visible and it is not always necessary to subdivide more than you will show. Using a smaller surface will allow more density and details in your subdivided ground mesh, allowing very close-up views when needed.

3 - They can be used as a Bump Map texture to fake the relief if you don't need real displacement or if the scene is too heavy for your computer with real displacement. If you can convert your sequence of images in a sequence of RGB Normal Maps, it will be even better !



For your first contact with the Blend file, select a layer and play the animation by [Alt+A] or with the controls in the timeline bar. In the Blend file, you will find :-

#### ***Tracks in grass :***

- Layer 1 : Lawn-Mower track in grass.
- Layer 2 : Car tracks in grass.
- Layer 3 : Predator track in grass.

#### ***Prints in sand, paint, soil, mud or snow:***

- Layer 4 : Cat prints.
- Layer 5 : Velociraptor prints (add bloody prints to the list).
- Layer 6 : Jeep Tire tracks.
- Layer 7 : Caterpillar tracks.
- Layer 8 : Dotted line and animated airplane to be used over a world map in your travel films or adventure movies (like Indiana Jones).
- Layer 11 : Human foot prints without shoes.

- Layer 12 : Human foot with shoes.

Some tracks have two curves: one is for the prints, and one is for the mask. It is helpful to edit the mask at curve crossings.

Foot prints are made of single prints parented to a long mesh with a Curve Modifier. The mesh is set to Dupli-Faces. So, if you want more space between steps, just edit the support mesh in Edit mode: Size X. If you want bigger or smaller prints, edit the Prints.

Caterpillars, Car Tire tracks and the blue tracks used in grass are made of one simple mesh with a repeated pattern. If you want more or less space between the two tracks, edit the tracks mesh.

Choose the track color by modifying its material.

- Choose the background color by changing the background plane or using the world color.
- In the Screen selector, use the Node compositor (Screen 2 - Compositing) to adjust the level of blur of the generated mask (Blur filter).
- Adjust your rendering parameters to match the desired resolution for your animated texture.
- Create your own path by editing the curve points.
- Use the Loc X parameter of the chosen track to move each track along the curve.
- Parent your vehicle or predator to the Empty used as driver which is itself parented to the tip of the track (vertex parented to 3 vertices at a tip of the mesh).

After rendering your animated texture as a sequence of image, import it in your project and apply it to your ground material (the best result is with Global or Object for the Map reference, with the texture set to Clip). You may have to re-size the setup in top view.

Now a second time, import into your project all the objects of the layer used to create your animated texture. Make a group before exporting, it makes things easier. I haven't made groups, because all grouped objects are shown in green, and it is not always fine when working in the 3D view. Put the imported objects on a layer where you will hide at rendering time). There is an empty moving with the animated mask. Use it as parent for your vehicle, in order to make it follow the textured track!

The ShrinkWrap modifier is usable with curves, so you can put your track curve over your terrain, and when applying the ShrinkWrap modifier, the curves falls on your modelled ground! You can move the empty used as the driver in the direction of Z axis, and parent your vehicle to it! This will allow your vehicle to perfectly follow the contour of the ground mesh.

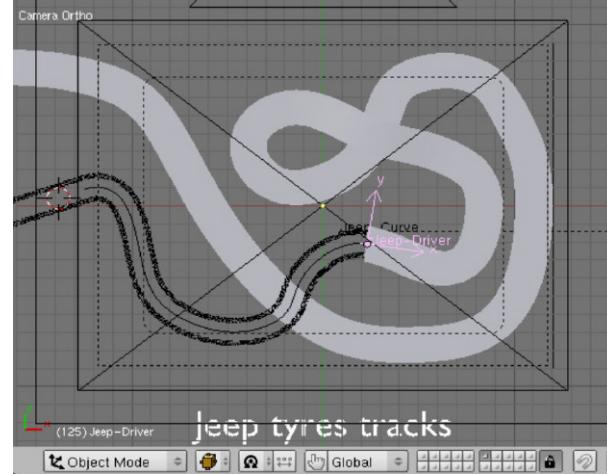
You will only have to adjust the X and Y axis to get visually a believable behavior for your vehicle. You can use

the mask mesh to drive your car with more accuracy, by following my tutorial about automated car animation. The Mask mesh is usable like the Arrow mesh in this tutorial.

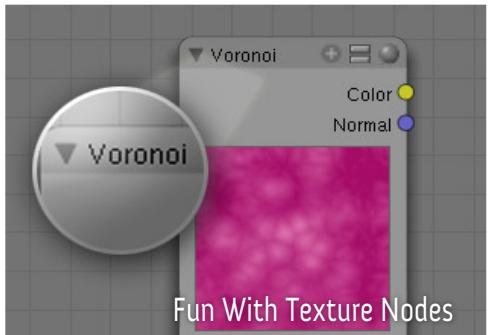
I hope that this tutorial and setup will be understandable and useful. All necessary files can be found in the Blender section of my website. Feel free to tell me if you noticed errors, missing information or if you have found a better way of doing this kind of work ! If you have ideas to create other kinds of tracks, I'm open to suggestions. Thank you for reading !

#### UPDATE: [Track Creator v3](#)

- New particle system for tracks generation added on Layer 9. Various wheels and caterpillar prints samples on layer 10.
- Wolf prints added on layer 13.
- Airplane silhouette improved on layer 8 ■



by Philippe Roubal



## Introduction

One of the funnest things about a new blender release is getting to play with and test the new features. So I cleared up some free time for playing and sat down to check out our new Texture Node feature.

With the release of Blender 2.49, you can now create custom textures just like you can with materials. Once created, these textures can be used just like regular textures. But since this is a new feature and I didn't pay any attention to the last development cycle, it dawned on me that just because it looked like fun, it didn't mean that I knew how to actually use Texture Nodes. So off to the release notes where I found a very [cool sample](#) that looked simple enough that I could replicate the effect.

So here are my first attempts, which are all variations on the sample image:



I discovered that playing with Texture Nodes was pretty easy, especially if you are somewhat familiar with how material nodes work.

All you need to do is, with your object selected, create:

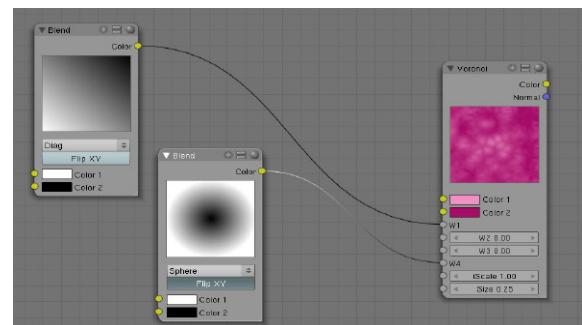
- A new material
- A new texture

In the Texture buttons window there is

a new button in the texture panel, Nodes. If you click it, all the normal texture options disappear. Which is totally okay, because we are going to create our textures in the Node editor window where, happily enough, all of our favorite options are available.

**Switch to the Node Editor.** Click on the new Texture button (it is the spotted one) Go ahead and delete the default checker node panel

- Add 2 Blend Nodes
- Add>Textures>Blend
- Add a Voroni Node
- Add>Textures>Voronoi (See Image below).



**For the 1st Blend choose:**

- Diagonal
- Color 1: white
- Color 2: Black

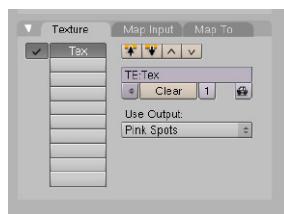
**For the 2nd Blend choose:**

- Sphere
- Color 1: white
- Color 2: black

**Connect the following:**

- Blend 1 (diagonal blend) to W1 socket on the Voroni node
- Blend 2 (sphere blend) to W4 socket on Voroni node
- On the Voroni Node you can play with the other settings until you get a pattern that makes you happy
- Connect the Voroni node's color socket to the Out-put Viewer's color socket
- There is a name box where you can give your new texture an unique name.
- Okay the Node texture is finished, so now let's use it.

In the Texture panel of the material buttons window, there is now a "Use Output" option with a drop down list of available node textures. Select the Texture you just created.



Now you can use it just like any other texture. You can use them in texture channels, as part of material nodes, with particle systems and even combine them with other textures.

And the fun part is you can go back and change colors, texture types and settings on the fly, as you need or want, just like you can in Material node setups.

**Now how cool is that?**

After I had gotten more comfortable with the texture nodes and my sample variations, I started playing a bit more and came up with a totally useless tie dyed look that amused me to no end ■



# 3D WORKSHOP: Water Tank

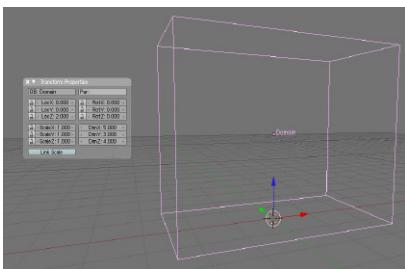


By Pascal Fallert

## Introduction

Sometime ago I made a fluid simulation and put it on YouTube. I was asked how I did that, so I decided to make a tutorial. Well, here it is.

**Step 1.** Create a cube, dimensions x=5, y=3, z=4. Name it "Domain"

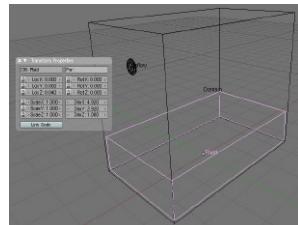
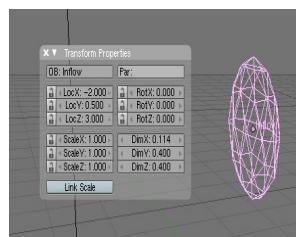


**Step 2.** Add an ico-sphere: Subdivision=2, Radius=0.2.

Scale it in edit-mode on the X-Axis 0.3. Location x=-2, y=0.5, z=3.

Name it "Inflow"

**Step 3.** Duplicate (Shift-D) the first cube, and move the sides and the bottom about 0.04BU towards the inside. The height should be about 1BU.



Name it "Fluid", this will be the water that is already in the water-tank.

**Step 4.** Now the Fluid-settings. Select the "Fluid-Mesh", go to Physics and enable the Fluid-button. Use the settings below:

**Step 5.** Select the "Domain-Mesh", enable the Fluid-button. Define the Mesh as Domain.

On the Std-page, change End to 12.

On the Adv-page, change Gravity Z to -20, and Realworld-size to 1.

**Step 6.** Select the Inflow-Sphere, enable the Fluid-button. Define the Mesh as Inflow. Leave the Settings, because we will use an IPO to control them.



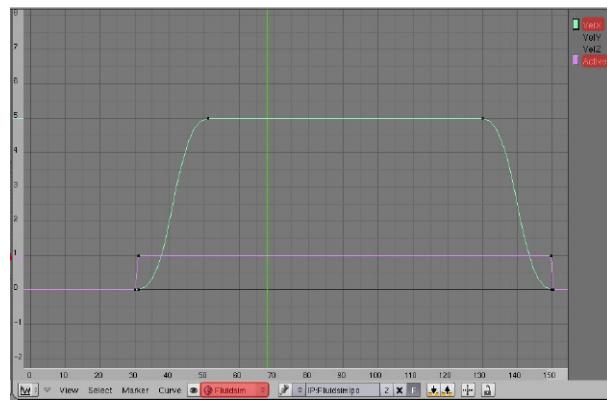
**Step 7.** IPO for the Inflow-Sphere. Open the IPO-editor and change the IPO-type to "Fluidsim". The Active-IPO activates the inflow on Frame 31, and stops it on Frame 151. Add a linear curve with the Points:

P1(x=30, y=0); P2(x=31, y=1); P3(x=150, y=1); P4(x=151, y=0).

The first 30 frames are for the fluid-object to "drop down". I don't use them for rendering, but in order for the waves to tranquilize. Maybe there's a better way to do this, but that's how I did it.

The second IPO-curve controls the velocity for the x-direction. It starts at frame 31 and rises up to 5 at frame 51. From frame 130 up to 150 it falls back to level 0. This makes the water fade in and out smoothly.

That's it. Select the Domain-mesh, go to Physics and hit BAKE. For a realistic result, you have to change the resolution to 200 or more, but this takes very long to calculate. It's useful to have a second computer to work with, while the first one calculates the simulation. Move "Inflow" and "Fluid" to an invisible layer, and set "domain" to smooth.



You should get something like this (frame 43): Render the frames 31 to about 250. You can find the Animation on my [homepage](#), or on [Youtube](#).

Here's a still from my simulation:

I hope you can use this tutorial, and make animations by yourself. If you have any questions, or know better ways to achieve this, please feel free to send me an email, or post a comment on Youtube ■



Cheers,

Pascal Fallert

[keith73@gmx.net](mailto:keith73@gmx.net)





Making Of Arkor

By Paulo Silva

## Introduction

In this tutorial I'm going to explain the general work-flow that I used to create my real-time character Arkor.

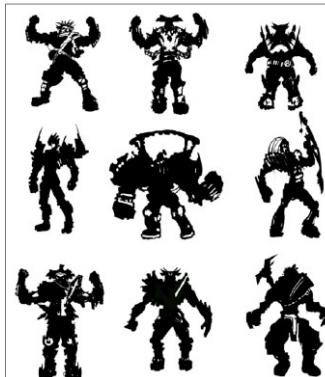
### Concept

A good concept is really important, and you should spend some

time here, because no mater how good a modeler you are, you can't do much if your initial concept is poor.

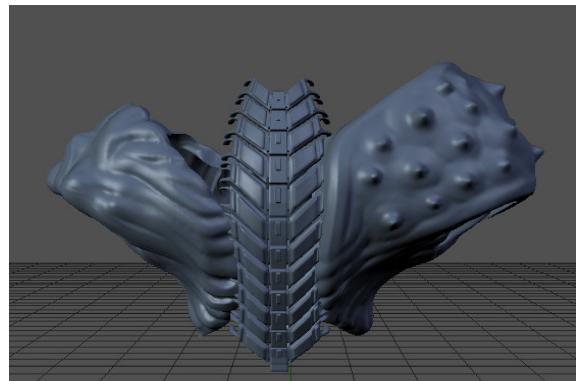
When working on the concept, I find it useful to explore the silhouette with a simple black and white drawing. Its easy and fast to draw and easy to discard, and when you find something you like you can go on and refine it.

Since I wanted to see how the concept worked in 3d, I did a simple base mesh and concept sculpt to test the shapes, and ended up changing quite a few things in the sculpt.



### Modeling the high poly

Here you need to model each piece that makes your model and decide how you are gonna model it.



Hard surfaces work better with poly modeling and nice beveled edges. When making organic surfaces, you'd be better off making a base mesh and then sculpting the detail with sculpt tools.

### Modeling the low poly

When modeling the low poly mesh, silhouette is the key! You need to use your polygons wisely and try to keep the silhouette of the high poly as much as the poly-budget allows. If a surface is mainly planar, then there is no need for many polys, since the details will come from the normal map. If your model is going to deform, then you also need to pay attention to the deformation areas (knees, elbows..) and add loops to support that deformation. Here your best friend is the blender retopology tool. :)

Activate it and draw your low poly geometry over the high poly. It's really a time saver!

## Baking

This part isn't much fun, but is a necessary evil. Once you have your low poly modeled and have done the UVs, it's baking time! For Arkor, I baked a normal map and an AO map that I used to paint the color map. For each piece you need to bake the normals and AO from the high poly to the low poly model. Approximate AO is much faster to bake, but it's a bit imprecise, so go for raytraced AO and do some tests to see how many samples you need to get a near "grain-less" image.



Be aware that any object that is visible in the scene will influence AO! So I sent only the objects that I need for each bake to a different layer make it the only visible layer when baking.

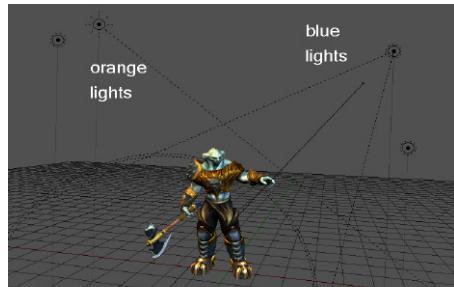
## Lights

Lighting is a very important step, since you can establish the general mood and bring out the details of your model.

I like to use slightly colored lights to showcase my models, generally in a cool / warm contrast. In this case I used a blue / orange contrast, where I have cool lights on the right side and orange lights on the left. Since this

is a real-time character there is no need to render and you get instant feedback on the blender viewport.

And that's it, this was the way I worked when making Arkor, I hope you found it useful and keep blending ;)

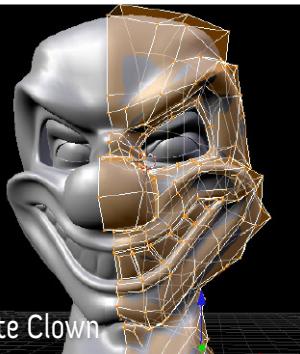


## Paulo Silva

My name is Paulo Silva and I'm a Portuguese modeler and animator. I discovered blender a few years ago and I just love its speed and versatility.

Website: [www.engelik.net](http://www.engelik.net)

# MAKING OF: Cute Clown



Making Of Cute Clown

By Leonardo Nahuel Belich

## Introduction

Hi my name Is Nahuel Belich, I have been playing around the CG world for more than six or seven years, but I have been using blender for less than a year. I hope you find this article useful or at least not too boring :D.

### How did the whole process start?

This project started as a competition, a seven day duel, the idea or concept for the duel was “a ver que sale de una caja” the translation is something like “lets see what’s coming from a box” referring to box modeling techniques, I took the idea a little bit more literal. The idea was to do a nice exotic clown, but suddenly while I was modeling it’s eyes, (the mask eye holes), I felt something, something wasn’t right, that was when it popped in my mind, that picture, that soul trapped behind that mask for who knows how long, waiting for who knows what, the only thing that I could do is to show everyone that there it was, waiting, staring, and thinking about the next move . . . no one can be far from a trapped soul.

### Which ones were my rules to follow?

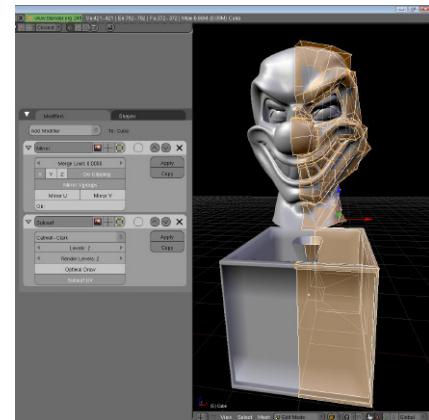
I try to work in the following order, first; modeling, second; light shading, third; materials and texture. This is just to structure my work, this doesn't always work. Often at the office, I'm obligated to mix all the steps because of different issues, but I try to keep an order over things, except naming conventions. . . . If you download the file

you will notice that is a little bit messy, I'm still working on that area . . .

### Modeling: Clown

First of all, I usually create a box or a plane to start modeling from, in this case I used a box and modeled using box modeling, at least at the beginning. I'm used to modeling using poly to poly techniques instead box modeling, also I made use of the sculpting tools. That is great resource to refine organic models, even if they don't have many subdivisions.

The second thing that I usually do, is to divide the mesh and apply a mirror and subsurf modifiers (fig1). The Mirror modifier, as its name says, copies over any selected axis, the mesh from the other side of the center



of the object. It also has a “do Clipping” option which locks the vertex aligned to the center and avoids any new face creation from any extrude action over the mirror center, and finally this mod mirrors uv's. So if the model is symmetrical, we only have to do the half of work and if it is not, this modifier leaves a perfect base mesh to deform and distort, again saving us some time.

[Part 1 Video](#) || [Part 2 Video](#)

## Cloth and candles:

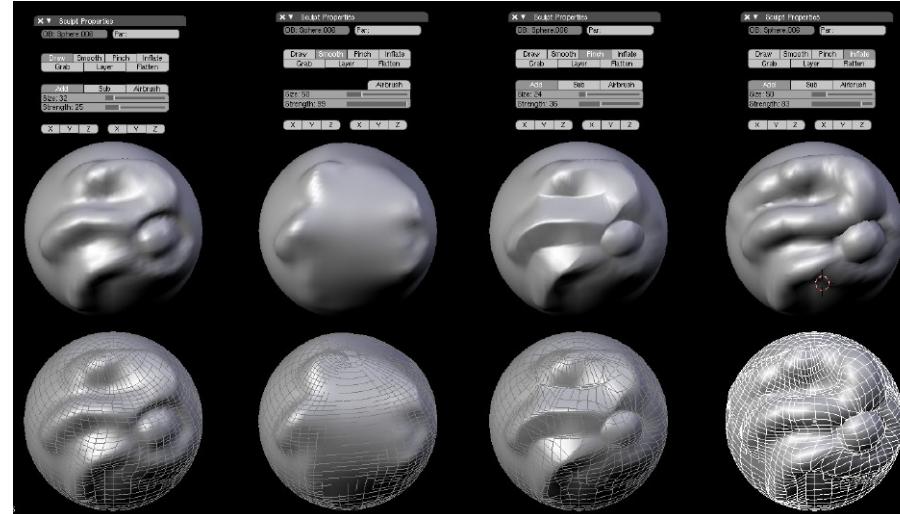
The tools for this task were the sculpting tools, a great resource that allows us to give shape extremely fast to any organic mesh, in this case fabric and wax.

The main sculpting tools that I used were, Draw, smooth, pinch and grab. Using these four modes were more than enough to do the job,

- **Draw(D):** This mode tends to move the faces in the direction of its normal
- **Smooth(S):** As its name says, this mode tends to smooth the mesh surface relaxing the vertex position.
- **Pinch(P):** Pinch tends to drag the vertex to the center of the brush, its useful to accentuate borders or creases, be aware that this brush can reach high distortion levels on the polygons size, its recommended to use in wire frame mode.
- **Grab(G):** This is more or less like the proportional edit falloff, but much more dynamic.
- **Inflate:** This last brush is a combination (more or less) of the draw brush and a invert and soft version of pinch brush. It does exactly what it says, it's like inflating the mesh

During the sculpting session there are a few useful shortcuts.

You can change the different sculpting tools using, D,S,P,G, if you want to change the brush size, F. It will



pop up a circle and that's the radius. To change the strength press Shift+F, It will pop up two circles, but you will control only the inner one. The bigger the inner circle the less strength, smaller is strongest. To rotate the brush, in case you are using any texture as a stencil, ctrl+F. These controls are more than enough to play with.

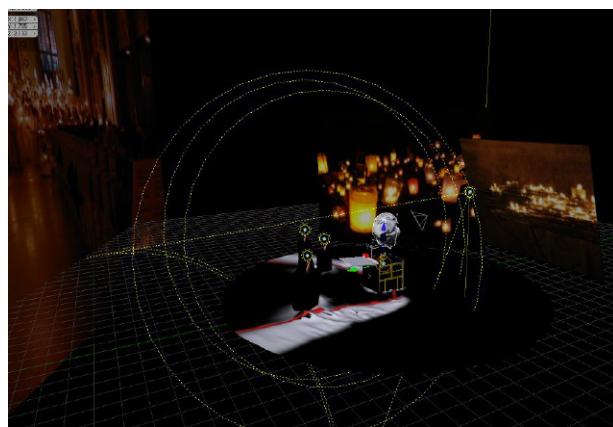
Even when the overall was done by sculpt tools, for fun and tests, the cloth over the spring was done using cloth simulation. Essentially I made a hole on the cloth and set the vertices of that hole as a vertex group, then in the cloth panel, I used that VG for pinning them in place, that kept the cloth in its place for the simulation that was done using the cotton preset and nothing else, after simulating the cloth, I sculpted some details.

[Cloth and Candles Video](#)

## Environment

About the environment, it's quite simple really. Using the help of Google!, I searched for images of candles, churches, temples and things like that. Once I had those pictures, I just mapped planes that were placed strategically to give the right reflections, but to know the right position is a little bit hard. So I took the mask and applied to it a material with full reflectivity, that way I verified the position and size of the planes.

Lighting was also a simple task, first I identified the main light sources. The candles behind and the pictures of the candles behind the camera. For the candles I placed three different Omni lights, and for the plane behind the camera, I used an area light. A few render tests without OSA and half size helped me to adjust intensity, position of the lights and also very important, adjust the shadows. Especially the bias and soft shadows sizes.



The second part of lighting belongs to my favorite pass, AO ( Ambient Occlusion). I'm not sure how or why, but

in blender, AO, an internal render pass that affects directly from the world options, this property of AO inside blender allows us to use it for lighting purposes.

You may think, why put the lights first and then use the AO pass for lighting? Well. . . the answer is simple, I know that I'm going to use AO, so all the lighting is darker than it should be. Also I don't care much about it because at the last, it's going to go through a node rig to make a color balance and contrast adjustment. The only thing that I'm careful with is to avoid any white or black extremes. As long as the picture has enough color information, we will be able to correct contrast and highlights by using nodes. [AO Video](#)

## UV and texture paint: The clown

After finishing the general setup, its time to detail textures. Before I start painting or texturing, it's needed to Unwrap the UV map. This is because we are going to place a 2d texture onto 3d mesh, so each vertex of the 3d mesh needs coordinates to know which pixels should be used in which polygons. Using the LSCM, unwrap is a really easy task. Just select the edges to become seams, press **Ctrl+E**, choose "mark seams", then select all polys and press **U** and select "unwrap". There it is!

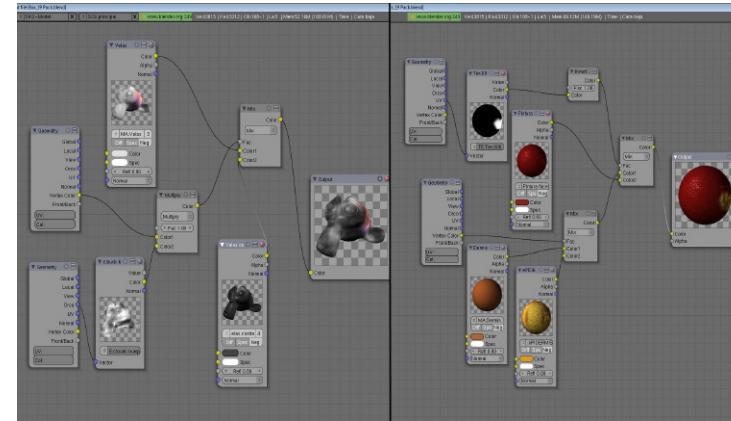
If it would be necessary, the unwrap can be refined later.



To start painting, it's needed to assign a texture to paint. If you want, you can start painting over that texture, but let's suppose that that wasn't done yet. Hit tab to switch to edit mode, hit A to select all, then inside the Uv/image editor create a new or open an existing image. That's it, now switch to texture paint mode, and start painting! [Uv Unwrap Video](#).

## Shaders for face and candles SSS!!

The "face" (the area around the eyes) and candles both have a similar shader. They are both SSS(Sub Surface Scattering) and node composed. The skin shader was worked from the skin shader in the blendermag issue 16 Wow Factor, (Written by Victor Malherbe). My version didn't have back face scattering and I added a "paint" layer instead. If you look closer, there is red paint around the eyes... , the candles don't have a dermis layer, but they have a SSS base for a wax effect and a proce-



Left candle wax shader, right face skin shader

[Face Shading Video](#) || [Candles Fire Comp Video](#)

## Final composition

The last step, post production, as you will see down below the node network, its not so complicated (if you are new in this, it may look as an ancient enigma, but it's not so complicated). I used the usual defocus node, glare effect, added a separate layer for candle fire and a separate layer for the corner shadowing (I think it was called vignette but I'm not sure)and something that is not a great thing but in this first time, it looked interesting to me.

As a common use, AO(Ambient Occlusion) in blender can be used as a complement for lightning, but I'm also used to using AO to add detail to creases, small holes details, etc. The problem was that the AO configured for lighting was right, so I had to create a different one without changing the original.



dural map to add that grunge. The fire of the candles is a geometry with a flame shape, but rendered in a different layer using compositing nodes like blur, color mix (Add mode) and a few things more that are all thrown over the background and there's fire!! (a post effect, See below ;)

by Leonardo Nahuel Belich

# MAKING OF: Cute Clown

by Leonardo Nahuel Belich

I have been using blender for 6 to 9 months, so this was a quite a pleasant surprise, especially for sequence composition environments, blender is capable of managing different scenes inside the same blend file. So even though AO is global for the entire scene and you only can have one, it is possible to create another scene, copying all objects, and set there a different AO, render the setup etc etc, that later will be combined by node editor (also see below and blend file).

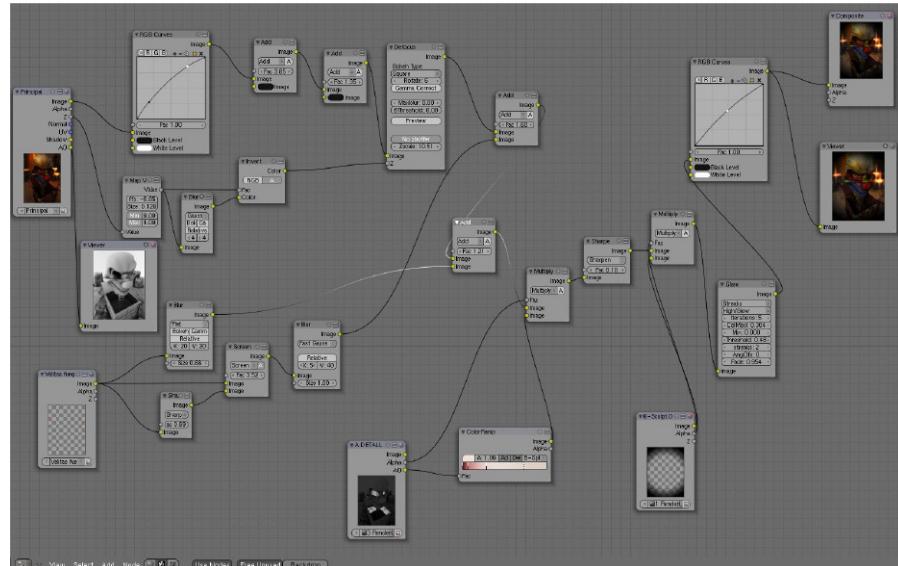
[URL:8 || Multi AO Guide](#)

## Final thoughts

I did two versions of this Cute clown, most of the videos that you will see are from the first version, the only differences are only a few more hours of work, nothing else.

With every new render I do, I try to learn something new, every new image should have a new technique, a new challenge or a new knowledge, and even when the process is not complete in these pages and videos, I hope that this would be useful as a guide or a lesson to anyone who needs it.

The main reason for writing this article, is that this was a kind of lesson. Resuming it helped me to fix knowledge and opens the probabilities to someone more experienced than me to take these techniques and refine it or develop new ones, allowing more resources for artists to create.



Finally a phrase that I feel like a motivation to keep going (but keep in mind that I'm not a poet :J) ■

*"I teach to learn and learn to teach, a circle that only leads us forward"*

*"Enseño para aprende y aprendo para enseñar un circulo vicioso que solamente nos hace avanzar"*

Thanks for Reading,

Leonardo Nahuel Belich

[Casillapforos@yahoo.com.ar](mailto:Casillapforos@yahoo.com.ar)

# MAKING OF: Cave Troll



Making Of Cave Troll

By Dawid Skrodzki

## Introduction

Hey guys, in this making-of, I will talk about a piece of work I did some time ago: The Cave Troll from the Lord of the Rings trilogy. Please forgive me if its not complete since I don't remember exactly every step.

Anyway, after watching the first part of the movie, I fell in love with the design of the creature: a huge gray troll with gigantic arms and hands, elephant-like legs and a small dull head with big protruding eyes. Moreover, I really liked the weight he had; you could feel the ground shaking with its every step.

So, to start I googled for some pictures from the movies and images of different kinds of sculptures. My first idea was to animate it, so I decided to create the base mesh in Blender, trying to make it as clean as I could. For the main body I used box-modeling technique. I started from rough shapes adding more details mainly by extruding and adding edge-loops. For the head, on the other hand, I used poly-modeling technique. Both parts were created sepa-



rately which I joined together later on. Since the head's mesh was much denser, I needed to add one subdivision level for the body mesh to match the amount of vertices. Therefore, I ended up with a much more complex mesh than I expected at the beginning.

The following step was UV unwrapping. It was the first time I had ever needed to unwrap such a complex (for me) mesh, so I made a mistake leaving the back of the creature relatively small. Later on, this mistake had led to some visible texture stretching in this part of the model.

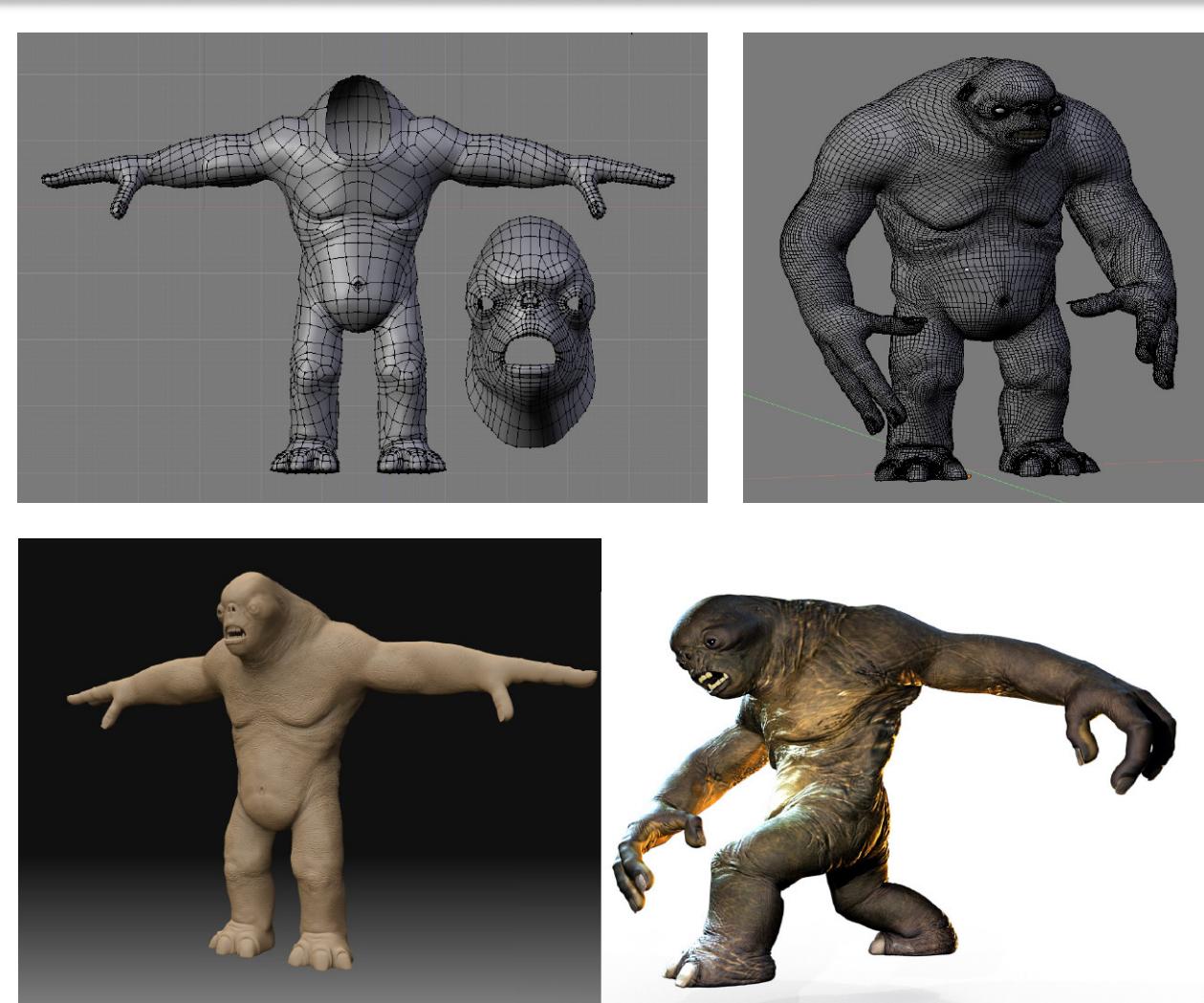
When I finished unwrapping, I exported it as a wavefront file (.obj) and brought it into Zbrush. I would like to mention that everything that I did in Zbrush could have been done in Blender as well with its great sculpting tool. It also would have made it much easier to extract the normal and displacement maps. Unfortunately, Blender still cannot display such a great number of polygons on-screen as Zbrush does, and because I was going for fine details, I decided to use Zbrush.

After importing the Cave Troll model, I had stored Morph Target. Next, I started sculpting the main body masses and muscles using the normal brush. Later on, I added some displacement levels to sculpt skin details such as wrinkles and skin folds using custom and default alphas. I used Zmapper for creating normal maps and Displacement Exporter for displacement maps. Unfortunately, I cannot remember which settings I used for exporting because I found them by a method of trial and error. One thing I can remember is that I was unable to export them as a 32 bit tiff image, so I needed to use 16 bit. I am on Ubuntu, so it seems that this was the problem, but I am not sure. Besides, it was necessary to flip the map alignment vertically.

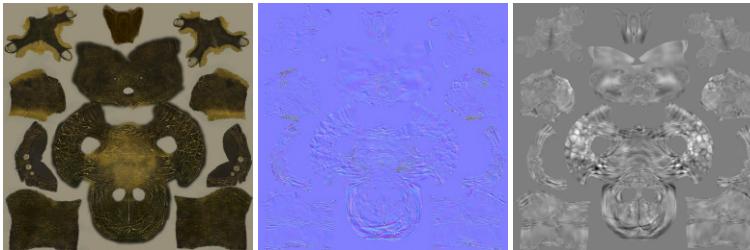
# MAKING OF: Cave Troll

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by Dawid Skrodzki



by Dawid Skrodzki



For the diffuse map, I used Zbrush as well. I roughly painted the main colors of the body with big strokes. After that, I used cavity with a displacement map and combined them together in Gimp with the color map. This way, I did not need to paint all the fine details manually. Next, looking for more "dirty" look, I made some color correction of ready texture which in the beginning used to be blue and yellow, but later on ended up more green and gray.

Back in Blender I started applying all the textures and maps to adjust them for correct display. For example, for the normal map it was necessary to switch off the MinMap. I also used the Displace Modifier, which gave me good control over the strength of the displacement map.

In the following step I created a very basic armature for posing purposes. I had a hard time with skinning since the model was quite fatty and as mentioned before the mesh was pretty dense. My idea was to pose it as it



though it was walking toward someone trying to grab him or her.

For the skin material I used a small amount of Specularity and Hardness together with a bit of Translucency. Additionally, I enabled Subsurface Scattering with small scale and some grayish and blueish color. Rendering was done with Blender Internal using Ambient Occlusion. I wanted to show him in some dark scene but on the other hand I did not want to lose the skin details. So, in the end, I went for a better lit scene in the mood of some battle under the moonlight. I hope you like it! ■

Thanks,

Dawid Skrodzki



by Sandra Gilbert

Some time ago, [Claas Kuhnen](#) announced that he had posted a series of video tutorials that he had produced for his students at Kendall College of Art and Design, where he is an Assistant Professor of Industrial Design. He currently has three different courses posted, all of which are filled with a massive amount of valuable information. Claas is a wonderful instructor. He covers each section in a clear and easy to understand way that makes Blender's rather steep learning curve much easier for new users to grasp. But don't be fooled into thinking that these courses are only for beginners. Even the more advanced user can gain valuable insight into how Blender works as well as some wonderful techniques and tips that you may not have known about.

### Blender 3D: Digital Modeling of Organic Surfaces

This series has an astounding 81 videos available at this time. The first 22 episodes are a great introduction to Blender for the new user. In the next 60 or so videos, Claas further reinforces the concepts already taught in the first videos by taking the viewer through a series of real life projects. With each project he covers the tools, steps and techniques needed to create clean models. In many of the modeling projects, he shows more than one way to accomplish the same task, giving versatility to his tutorials and showing techniques or work flows that you may not have previously considered.

### Modeling projects:

- Modeling a Water Bottle (with tips on creating details)
- Modeling a Water Bottle (spin/lather method)
- Soft Cushioning
- Panton Sheet Chair
- Bend Plywood Chair
- Eames Chair (with both a 4 and 5 star base)
- Big Bobby Car
- Extruded Wave Table
- Solid Pipe Chair
- Kayak (boat shell and rudders)

As the lessons progress there are additional videos covering the more advanced tools and techniques, which he then uses in the modeling projects. This series in particular is invaluable as a learning tool for new users attempting to come to terms with Blender's unique workflow, as well as a good refresher course for more advanced users seeking to incorporate new tools and techniques into their work.

### Blender 3D: Product Rendering

This series of tutorials currently has 91 videos covering the wide topic of rendering based on a good image of your product. Since quite a few factors come into play when rendering out an image, Claas covers lights and materials in depth, including UV -

mapping, compositing, world settings, ambient occlusion and other valuable settings that need to be considered for a good image. Once you have mastered the previous set of tutorials, this series will show you how to polish your project and create great renders.

## **Blender 3D: Product Animation**

This series contains 13 videos so far and covers the basics of key frame animation, as well as some valuable tips for setting up product animations.

## **Rhino 3D: Digital Product Modeling and Surfacing**

Claas also has a digital modeling series focused on Rhino 3d. This series contains 70 videos and covers many of the same concepts covered in the Blender Modeling series.

Even if you don't use Rhino, the concepts can be applied to Blender rather easily. At any rate, it is always fun to see how something is done in other software and applying it to your favorite software. It is a good series and very educational to watch.

All of Claas's videos are on blip.tv and can be watched there at the following links or can be downloaded through iTunes (there is an iTunes link on each show page) or other RSS softwares.

[Blender Modeling](#)

[Blender Rendering](#)

[Rhino Modeling](#)

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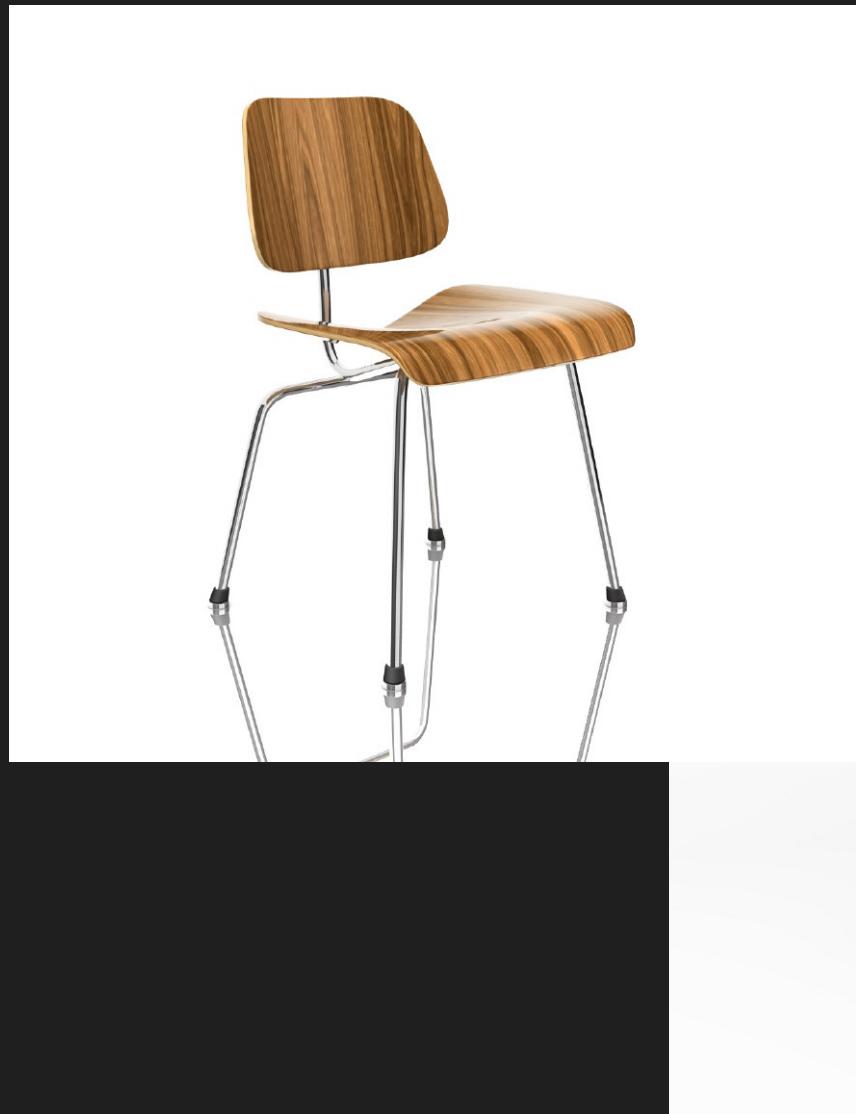














**GALLERIA**

Cerise - by Octavio Augusto

**GALLERIA**



Friend Of Birds - by Zoltan Miklosi

# GALLERIA



The Violinist - by Zoltan Miklosi

# GALLERIA



The Guitarist - by Zoltan Miklosi

# GALLERIA

Woman With A Hat - by Zoltan Miklosi





**GALLERIA**

Steam Cleaner & Prod\_25 - by Riyaz Gomes

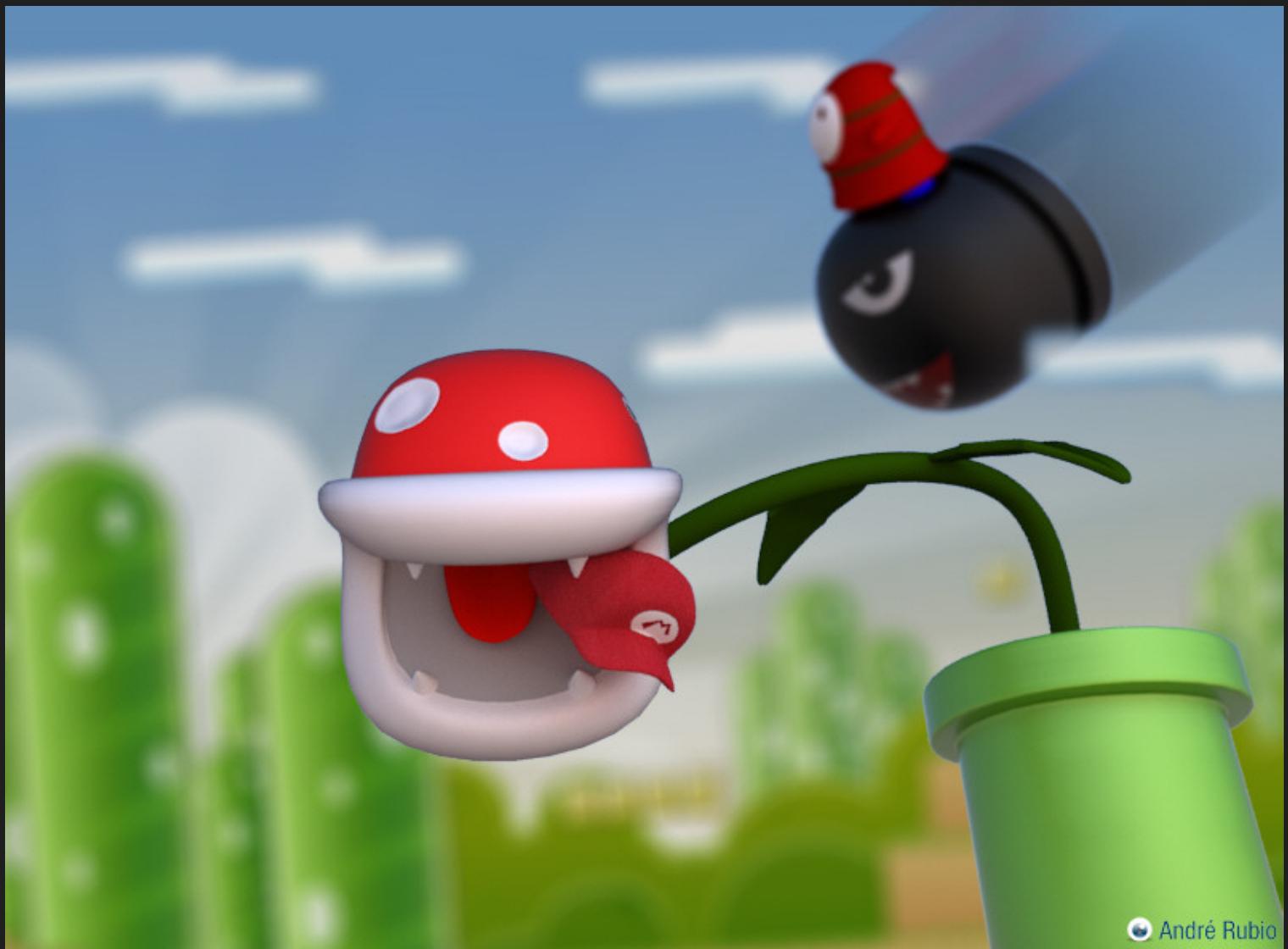


TAURUS

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GALLERIA

Taurus - by Bruno Albert



 André Rubio

**GALLERIA**

Mamamia - by André Rubio



**GALLERIA**

wokoo2 - by Toni Buenavida



GALLERIA

wokobig - by Toni Buenavida

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## Here is how!

### 1. We accept the following:

- Tutorials explaining new Blender features, 3dconcepts, techniques or articles based on current theme of the magazine.
- Reports on useful Blender events throughout the world.
- Cartoons related to blender world.

### 2. Send submissions to [sandra@blenderart.org](mailto:sandra@blenderart.org). Send us a notification on what you want to write and we can follow up from there. (Some guidelines you must follow)

- Images are preferred in PNG but good quality JPG can also do. Images should be separate from the text document.
- Make sure that screenshots are clear and readable and the renders should be at least 800px, but not more than 1600px at maximum.
- Sequential naming of images like, image 001.png... etc.
- Text should be in either ODT, DOC, TXT or HTML.
- Archive them using 7zip or RAR or less preferably zip.

### 3. Please include the following in your email:

- Name: This can be your full name or blenderartist avtar.
- Photograph: As PNG and maximum width of 256Px. (Only if submitting the article for the first time )
- About yourself: Max 25 words .
- Website: (optional)

Note: All the approved submissions can be placed in the final issue or subsequent issue if deemed fit. All submissions will be cropped/modified if necessary. For more details see the blenderart website.

## Issue 23

### "Epic Fantasy"

- Heroes (male and female).
- Monsters and Dragons.
- Fantasy action Images, Animations and Games.
- Castles and Fantasy Environments.

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